

CLAIM

- 1 1. A switch coupled between a plurality of host units and a device for communicating there
2 between and comprising:
 - 3 a) a first serial advanced technology attachment (ATA) port coupled to a first host
4 unit;
 - 5 b) a second serial ATA port coupled to a second host unit;
 - 6 c) a third serial ATA port coupled to a device; and
 - 7 d) an arbitration and control circuit for selecting one of the first host or second host
8 units to be coupled to the device, through the switch, whenever either one of the
9 first or second host units sends commands for execution thereof by the device.
- 1 2. A switch as recited in claim 1 wherein said first serial ATA port includes a first host
2 task file.
- 1 3. A switch as recited in claim 1 wherein said second serial ATA port includes a second
2 host task file.
- 1 4. A switch as recited in claim 3 wherein said third serial ATA port includes a device
2 task file.
- 1 5. A switch as recited in claim 3 wherein said first, second and third ports are level 4
2 ports.
- 1 6. A switch as recited in claim 1 wherein said device is a storage unit.
- 1 7. A switch as recited in claim 1 wherein said switch is employed in an enterprise
2 system.
- 1 8. A switch as recited in claim 1 wherein said arbitration and control circuit causes
2 concurrent access of the device by the first and second host units.
- 1 9. A switch as recited in claim 1 wherein information, in the form of data, commands or
2 setup, is transferred from the device to the first or second host units through the switch

3 and the information is modified by the switch prior to being received by the first or
4 second host units such that modified information rather than the information is
5 received by the first or second host units.

1 10. A switch as recited in claim 9 wherein the information is referred to as 'identify drive
2 response'.

1 11. A switch as recited in claim 9 wherein the information is referred to as 'Tag'.

1 12. A switch as recited in claim 1 wherein information, in the form of data, commands or
2 setup, is transferred from the first or second host units to the device through the switch
3 and the information is modified by the switch prior to being received by the device
4 such that modified information rather than the information is received by the device.

1 13. A switch as recited in claim 12 wherein the information is referred to as 'Tag'.

1 14. A switch as recited in claim 12 wherein the arbitration and control circuit include a
2 Tag/Sactive Mapping Circuit for mapping a host tag to a device tag and inverse
3 mapping for identifying a host.

1 15. A switch as recited in claim 1 wherein either the first or the second host sends a
2 legacy queue command queued by the device.

1 16. A switch as recited in claim 1 wherein either the first or the second host sends a native
2 queue command for for execution thereof by the device.

1 17. A switch as recited in claim 16 where the Tag in the native queue command is
2 modified prior to sending to the Device to avoid using the same Tag for both hosts
3 and not to exceed the naximum allowed Tag value.

1 18. A switch as recited in claim 17 where the Tag received in a FIS from Device is
2 modified to its original value prior to sending to the Host.

1 19. A switch as recited in claim 1 wherein the first, second and third ports are level 3
2 serial ATA ports and a Data FIS FIFO and an associated FIFO Control are coupled to
3 the first, second and third ports and are located externally thereto.

1 20. A switch comprising:

- 2 a) a first serial advanced technology attachment (ATA) port for connection to a
3 first host unit;
4 b) a second serial ATA port for connection to a second host unit;
5 c) a third serial ATA port for connection to a device; and
6 d) an arbitration and control circuit for selecting either the first host unit or the
7 second host unit to be coupled to the device, through the switch, when either
8 host units sends commands for execution by the device,
9 wherein while one of the first or second host units is coupled to the device, through the
10 switch, the other one of the first or second host units sends a command to the switch for
11 execution by the device.

1 21. A switch as recited in claim 20 wherein the switch is a serial ATA switch.

1 22. A switch as recited in claim 20 wherein said first serial ATA port includes a first host
2 task file.

1 23. A switch as recited in claim 22 wherein said second serial ATA port includes a second
2 host task file.

1 24. A switch as recited in claim 23 wherein said third serial ATA port includes a device
2 task file.

1 25. A switch as recited in claim 20 wherein said device is a storage unit.

1 26. A switch as recited in claim 20 wherein said switch is employed in an enterprise
2 system.

1 27. A switch as recited in claim 20 wherein said arbitration and control causes concurrent
2 access of the device by the first and second host units.

1 28. A switch as recited in claim 20 wherein information, in the form of data, commands
2 or setup, is transferred from the device to the first or second host units through the
3 switch and the information is modified by the switch prior to being received by the
4 first or second host units such that modified information rather than the information is
5 received by the first or second host units.

1 29. A switch as recited in claim 28 wherein the information is referred to as 'TAG'.

1 30. A switch as recited in claim 28 wherein the information is referred to as 'identity drive
2 response'.

1 31. A switch as recited in claim 20 wherein information, in the form of data, commands
2 or setup, is transferred from the first or second host units to the device through the
3 switch and the information is modified by the switch prior to being received by the
4 device such that modified information rather than the information is received by the
5 device.

1 32. A switch as recited in claim 31 wherein the information is referred to as 'Tag'.